

Continuing Medical Education

A Survey Among Physicians Practicing in San Diego and Imperial Counties

BARBARA L. BRODY, M.P.H., AND JOSEPH STOKES III, M.D., *La Jolla*

● *Patterns of continuing education of 244 physicians practicing in San Diego and Imperial Counties were studied by means of an interview questionnaire. An additional 20 internists and general practitioners were observed for one week in order to check the validity of the questionnaire findings.*

All physicians reported that they engaged in one or more means of continuing education and about three quarters had attended at least one formal course during the preceding three years. Almost all (99 percent) had attended some hospital-based teaching conference, tumor board or professional society meeting during the year preceding interview and 88 percent had attended at least once each month. Physicians in group practice participated more regularly in continuing education than those in solo practice, but no differences in participation were observed between those practicing in the metropolitan area of San Diego and those practicing in the other areas of the two counties. Different patterns of continuing education by specialty are also reported and the attitudes of physicians toward continuing education are described.

THE CONTINUING EDUCATION of physicians has been scrutinized in recent years,^{1,2} including the role that state medical societies should play³ and its relationship to recertification of physicians.⁴ This concern is based on the premise that ad-

vances in medical care can best be implemented by instructing practicing physicians and other health professionals in the new skills and knowledge. Although there is broad agreement that the premise is sound, there is still wide disagreement and little data evaluating the relative efficacy of the various methods now used to keep physicians abreast of changes in medical care.^{5,6,7,8}

With the advent of the California Regional Medical Program (CRMP) in 1966 with its special mission to support the continued training

Assistant Coordinator, Area VII of the California Regional Medical Program (Brody); Professor and Chairman, Department of Community Medicine, University of California, San Diego, School of Medicine, La Jolla, and Acting Coordinator, Area VII of the California Regional Medical Program (Stokes).

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Reprint requests to: Department of Community Medicine, University of California, San Diego, School of Medicine, La Jolla 92037 (Dr. J. Stokes).

of all health professionals involved with the care of patients with heart disease, cancer and stroke, new interest was focused on continuing medical education and the means by which it is implemented. There is also little data as to the degree to which physicians actually participate in continuing education or as to their own evaluation and attitudes toward the various methods now being used to teach them new medical knowledge and skills. A survey of continuing education based upon responses to a mailed questionnaire was conducted by the California Medical Education and Research Foundation.⁹ To supplement the information gained from this survey, Area VII of CRMP undertook an interview survey in greater depth in order to determine the participation in continuing education by physicians in San Diego and Imperial Counties and also to determine their attitudes and opinions on both the strengths and weaknesses of existing programs. We will also report the relationship between the degree of participation in continuing education and the type of practice (specialty), the kind of organization (solo or group) and the location (metropolitan or non-metropolitan).

Methods

Sampling. During the summer of 1968 four medical students who had already been accepted to the charter class at U.C. San Diego School of Medicine conducted interviews with 244 physi-

cians taken at random from all practicing physicians in the two-county area who accepted some measure of primary and direct responsibility for the care of patients with heart disease, cancer and stroke. In February 1968, the Medical Mailing Service of the American Medical Association listed 1,599 practicing physicians in the two-county area excluding those in full-time military practice. Of these, 362 physicians in such specialties as pathology, psychiatry, anesthesiology and preventive medicine were then excluded from the sample on the assumption that they did not assume primary care for patients with heart disease, cancer and stroke. Twenty percent random samples of all specialties were drawn from the remaining 1,237 physicians within both the metropolitan area and rural areas of the two counties. In order to gain the cooperation of 244 physicians for interview it was necessary to contact 284, of whom 40 (14 percent) declined for various reasons. Thus 86 percent agreed to participate and the sampling ratios are listed in Table 1.

Table 2 summarizes the numbers of associates with whom interviewed physicians worked either in partnership or group practice. Most physicians were in solo practice (56 percent) and few (6 percent) were members of larger group practices of 11 or more physicians. The remaining physicians were members either of small groups or partnerships of from between two and ten physicians.

Questionnaire. The questionnaire designed for the survey inquired as to (1) the importance of heart disease, cancer and stroke in the practice of physicians, (2) physician behavior regarding continuing medical education and (3) physician opinion regarding the need for additional community services and facilities for patients with heart disease, cancer and stroke. The questions related to continuing education were designed

TABLE 1.—Interview Sample by Specialty, Type and Place of Practice

| Specialty | Number in Practice | Number Interviewed | Percent Interviewed |
|--------------------------|--------------------|--------------------|---------------------|
| General Practice | 475 | 93 | 19.6 |
| Int. Med. | 143 | 31 | 21.6 |
| Ob-Gyn | 103 | 17 | 16.5 |
| Pediatrics | 68 | 13 | 19.2 |
| Radiology | 60 | 13 | 21.8 |
| Surgery | 108 | 23 | 21.2 |
| Others | 278 | 54 | 19.4 |
| <i>Type of Practice</i> | | | |
| Solo | 901 | 136 | 15.1* |
| Group | 325 | 103 | 31.9 |
| Unknown | 11 | 5 | ... |
| <i>Place of Practice</i> | | | |
| Met. S. D. | 1020 | 201 | 19.7 |
| Other (rural) | 217 | 43 | 19.8 |
| Total | 1237 | 244 | 19.7 |

*Since the sample was not drawn with the organization of practice (group vs. solo) as a constraint it can be assumed that the acceptance ratio for physicians in group practice may have been higher than that for physicians in solo practice since 31.9 percent of all physicians interviewed were in group practice compared with only 15.1 percent in solo practice.

TABLE 2.—Number of Associates in Group Practices or Partnerships

| | Number of Associates | Number of Physicians | Percent of Physicians |
|-------------------------------|----------------------|----------------------|-----------------------|
| Solo Practice | 0 | 136 | 56 |
| Group Practice or Partnership | 1 | 34 | 14 |
| | 2-3 | 35 | 14 |
| | 4-9 | 15 | 6 |
| | 10 + | 14 | 6 |
| | Unknown | 10 | 4 |

TABLE 3.—Participation in Formal Courses* Designed for the Continuing Education of Physicians

| | No. of Phys. | Mean No. of Courses | No. | None % | No. | One % | No. | 2 to 3 % | No. | 4 or more % |
|--------------------------|-----------------|---------------------------|-----|-----------|-----|----------|-----|-------------|-----|----------------|
| <i>Specialty</i> | | | | | | | | | | |
| General Practice | 77 | 3.4 | 17 | 22 | 30 | 39 | 20 | 26 | 10 | 13 |
| Int. Med. | 28 | 2.3 | 10 | 36 | 13 | 46 | 4 | 14 | 1 | 4 |
| Ob-Gyn | 17 | 1.9 | 5 | 30 | 8 | 47 | 3 | 18 | 1 | 6 |
| Pediatrics | 9 | 3.3 | 3 | 33 | 1 | 11 | 4 | 44 | 1 | 11 |
| Radiology | 11 | 2.2 | 0 | 0 | 7 | 64 | 3 | 27 | 1 | 9 |
| Surgery | 20 | 2.7 | 6 | 30 | 7 | 35 | 4 | 20 | 3 | 15 |
| Others | 45 | 3.2 | 13 | 29 | 14 | 31 | 14 | 31 | 4 | 9 |
| <i>Type of Practice</i> | | | | | | | | | | |
| Solo | 112 | 3.0 | 35 | 31 | 42 | 37 | 23 | 21 | 12 | 11 |
| Group | 89 | 2.9 | 17 | 19 | 34 | 38 | 29 | 33 | 9 | 89 |
| <i>Place of Practice</i> | | | | | | | | | | |
| Met. S. D. | 108 | 2.9 | 46 | 27 | 64 | 38 | 43 | 26 | 15 | 9 |
| Other (rural) | 39 | 3.2 | 8 | 21 | 16 | 41 | 9 | 23 | 6 | 15 |
| All Physicians | 207 | 3.0 | 54 | 26 | 80 | 39 | 52 | 25 | 21 | 10 |

*The sponsorship of these courses was University Medical Center 48%, Professional Society 41%, Voluntary Health Agency 5%, Other Hospital 4%, and Other Sponsorship 2%.

to obtain data regarding attendance at formal post-graduate courses, hospital-based teaching conferences, professional society meetings, the reading of medical journals, viewing or listening to video or audio tape recordings, personal communications with colleagues and discussions with pharmaceutical company representatives. Physicians were also asked their opinions as to the effectiveness of the various methods of continuing education, how they might be improved and what, if any, they believed to be their responsibility was to remain abreast of new knowledge.

Each of the physicians chosen in the sample then received a letter from their county medical society representative on the RMP Area Advisory Committee which explained the purpose of the interview. An interviewer then contacted each physician for an interview which usually lasted between 30 and 60 minutes.

To supplement the questionnaire data, samples were also drawn of general practitioners and board-certified internists in group and solo practice in the metropolitan San Diego area between 40 and 55 years of age. The 20 physicians in this sample all submitted to a one week time-study of their professional time allocation, including that spent on continuing education, which is being reported elsewhere.¹⁰

Observations

From Questionnaire. Table 3 summarizes the data obtained from those physicians who offered

complete information regarding their participation in formal postgraduate education courses. Of these 207 physicians, 54 (26 percent) had not participated in any formal courses during the three years preceding the interview. In contrast, 21 physicians (10 percent) had participated in four or more courses during this three-year period. These 207 physicians had taken more than 600 courses, for an average of 3 courses per physician. General practitioners, pediatricians and "other" specialists were somewhat more inclined to participate in formal courses than were physicians in the other specialties analyzed. There were no differences observed either between group and solo practice or between urban and non-urban practice.

The formal courses varied in duration from 20 (5 percent) of only one day's duration, to eight (2 percent) lasting more than a week. The remainder (93 percent) varied from two to seven days. Most of the courses (48 percent) were sponsored by university medical centers although almost as many (41 percent) were sponsored by professional societies, with the remaining 11 percent sponsored by the voluntary health agencies, community or government hospital and other organizations.

Only 20 percent of the postgraduate courses were held in San Diego and Imperial Counties. Twenty percent were held in Los Angeles, 22 percent in San Francisco and 5 percent in other cities in California for a total of 73 percent of all courses in the state of California. An addi-

TABLE 4.—Frequency of Attendance at Hospital-Based Teaching Conferences, Tumor Boards and Professional Society Meetings

| | Hospital-Based | | Professional Society Mtgs. | | TOTAL No. per Mo. |
|---------------------------|-------------------------------|----------------------|----------------------------|--------------------------|----------------------|
| | Teaching Conf. No. per Mo. | Tumor No. per Mo. | In County No. per Mo. | Elsewhere No. per Mo. | |
| <i>Specialty</i> | | | | | |
| General Practice | 1.7 | 0.3 | 0.8 | 0.2 | 3.0 |
| Int. Med. | 4.2 | 0.4 | 1.1 | 0.2 | 5.9 |
| Ob-Gyn | 4.0 | 0.8 | 1.1 | 0.2 | 6.1 |
| Pediatrics | 7.1 | 0.1 | 1.6 | 0.2 | 9.0 |
| Radiology | 3.2 | 0.9 | 1.1 | 0.4 | 6.6 |
| Surgery | 3.8 | 1.0 | 1.6 | 0.2 | 6.6 |
| Others | 3.2 | 0.4 | 1.0 | 0.3 | 4.9 |
| <i>Type of Practice</i> | | | | | |
| Solo | 2.6 | 0.3 | 0.9 | 0.2 | 4.0 |
| Group | 3.6 | 0.6 | 1.1 | 0.3 | 5.6 |
| <i>Place of Residence</i> | | | | | |
| Metropolitan San Diego | 3.0 | 0.4 | 1.1 | 0.2 | 4.7 |
| Other (rural) | 3.1 | 0.5 | 0.7 | 0.2 | 4.5 |
| All Physicians | 3.0 | 0.4 | 1.0 | 0.2 | 4.7 |

TABLE 5.—Number and Rate of Subscription to CMA Audio-Digest Tapes and Observation of Medical Television Broadcast and Video Tapes

| | Physicians Subs. to CMA Tapes | | Physicians Obser. T.V. Conf. | |
|--------------------------|----------------------------------|----|---------------------------------|----|
| | No. | % | No. | % |
| <i>Specialty</i> | | | | |
| General Practice | 19 | 21 | 38 | 41 |
| Int. Med. | 14 | 45 | 7 | 23 |
| Ob-Gyn | 5 | 29 | 8 | 44 |
| Pediatrics | 4 | 31 | 6 | 43 |
| Radiology | 1 | 8 | 2 | 15 |
| Surgery | 7 | 30 | 9 | 39 |
| Other | 6 | 11 | 14 | 26 |
| <i>Type of Practice</i> | | | | |
| Solo | 21 | 15 | 49 | 35 |
| Group | 34 | 32 | 30 | 28 |
| <i>Place of Practice</i> | | | | |
| Met. S. D. | 48 | 24 | 67 | 33 |
| Other (rural) | 8 | 19 | 17 | 40 |
| All Physicians | 56 | 23 | 84 | 34 |

tional 26 percent were held elsewhere in the United States, and only 4 (1 percent) were outside the United States.

Table 4 summarizes the frequency of attendance at hospital-based teaching conferences and professional society meetings. The average interviewed physician attended approximately one conference each week (4.7 per month) three quarters of which were hospital-based teaching conferences or tumor boards and the remainder professional society meetings either in the county or elsewhere in the state. Participation was highest among pediatricians (nine per month) and

lowest for general practitioners (three per month) with other specialties ranging between these two extremes. Those in group practice attended 5.6 meetings per month, while those in solo practice participated in only 4. There were no differences between those physicians practicing in metropolitan San Diego and those practicing elsewhere in the two counties.

Subscription practices to CMA Audio-Digest tapes and participation in television broadcasts and video-tape conferences are summarized on Table 5. Pronounced variation in subscription rates between the various specialties were noted for the Audio-Digest tape, with 45 percent of all internists subscribing compared with 8 percent of radiologists. Those in group practice were also twice as likely (32 percent) to subscribe as those in solo practice (15 percent). The proportion of urban physicians practicing in metropolitan San Diego who subscribed was somewhat greater (24 percent) than of those living in other areas of the two counties (19 percent).

Only 34 percent of all physicians had viewed a televised conference over the year preceding the interview and such viewing was more common among those in general practice, obstetrics and gynecology, pediatrics and surgery than in other specialties. Viewing was also more frequent among those in solo practice in rural areas than among those in group practice in metropolitan San Diego.

The proportion of physicians consulting with

TABLE 6.—Number and Proportion of Physicians Communicating with Drug Company Representatives

| | Regularly Communicate | | Occasionally Communicate | | Never Communicate | |
|--------------------------|-----------------------|-----|--------------------------|----|-------------------|---|
| | No. | % | No. | % | No. | % |
| <i>Specialty</i> | | | | | | |
| General Practice | 83 | 89 | 8 | 9 | 2 | 2 |
| Int. Med. | 20 | 65 | 8 | 26 | 3 | 9 |
| Ob-Gyn | 15 | 88 | 1 | 6 | 1 | 6 |
| Pediatrics | 13 | 100 | 0 | 0 | 0 | 0 |
| Radiology | 6 | 46 | 6 | 46 | 1 | 8 |
| Surgery | 16 | 70 | 6 | 26 | 1 | 4 |
| Other | 43 | 79 | 8 | 15 | 3 | 6 |
| <i>Type of Practice</i> | | | | | | |
| Solo | 114 | 84 | 15 | 11 | 7 | 5 |
| Group | 77 | 75 | 21 | 21 | 4 | 4 |
| <i>Place of Practice</i> | | | | | | |
| Met. S. D. | 162 | 80 | 29 | 15 | 10 | 5 |
| Other (rural) | 34 | 79 | 8 | 19 | 1 | 2 |
| All Physicians | 196 | 80 | 37 | 15 | 11 | 5 |

TABLE 7.—Journal Subscription and Reading Practices

| | Regular Journals | | | Irregular Journals |
|--------------------------|---------------------------|--------------------|-------|----------------------------------|
| | Mean No. of Subscriptions | Mean No. of Others | Total | Proportion of Physicians Reading |
| <i>Specialty</i> | | | | |
| General Practice | 6.7 | 0.6 | 7.3 | 34% |
| Int. Med. | 6.5 | 0.9 | 7.4 | 29% |
| Ob-Gyn | 5.4 | 0.5 | 6.9 | 56% |
| Pediatrics | 4.9 | 5.4 | 10.3 | 38% |
| Radiology | 5.2 | 1.6 | 6.8 | 8% |
| Surgery | 9.5 | 1.2 | 10.7 | 35% |
| Other | 6.4 | 0.4 | 6.8 | 30% |
| <i>Type of Practice</i> | | | | |
| Solo | 6.3 | 0.9 | 7.2 | 35% |
| Group | 7.1 | 1.0 | 8.1 | 30% |
| <i>Place of Practice</i> | | | | |
| Met. S. D. | 6.5 | 1.0 | 7.5 | 33% |
| Other (rural) | 7.1 | 0.7 | 7.7 | 33% |
| All Physicians | 6.6 | 1.0 | 7.5 | 33% |

pharmaceutical house representatives is summarized on Table 6. Most physicians (80 percent) regularly saw detail men (with the possible exception of radiologists) and only 5 percent refused to see them. All of the pediatricians uniformly talked with detail men while almost 10 percent of internists and radiologists never did.

The average physician subscribed to more than six medical journals and regularly read an additional journal to which he or she did not subscribe (Table 7). Surprisingly few physicians (33 percent) read the "irregular" journals such as *Medical World News* which were most popular among the obstetricians and gynecologists and least popular among the radiologists.

Interviewed physicians' attitudes toward con-

tinuing education are summarized in Table 8.* The majority in each specialty believed that they, themselves, bore a major responsibility for maintaining their medical knowledge and skill through continuing education. Most also believed that there was some lag in the implementation of new medical developments due to the inadequacy of continuing education programs. However, these opinions bore no correlation to specialty, type of practice or place of practice.

The methods suggested for improving continuing education are summarized on Table 9. Over a third of the sample interviewed had no suggestions, another 17 percent suggested that there should be more courses. Three physicians (1

*These questions were suggested at the time of discussion with Dr. Curtis P. McLaughlin and Dr. Edgar Engleman.

TABLE 8.—Attitudes of Physicians Toward Continuing Education

| | Proportion Believing Physicians Responsibility to Be | | | | Proportion Believing That Lag in Implementation Was | | |
|--------------------------|---|------|------|-------|--|------|---------|
| | Little or None | Some | Mod. | Major | None | Some | Serious |
| <i>Specialty</i> | | | | | | | |
| General Practice | 1 | 15 | 30 | 54 | 20 | 72 | 8 |
| Int. Med. | 0 | 7 | 33 | 60 | 31 | 55 | 14 |
| Ob-Gyn | 0 | 17 | 33 | 50 | 35 | 59 | 6 |
| Pediatrics | 8 | 8 | 23 | 61 | 15 | 62 | 23 |
| Radiology | 0 | 17 | 17 | 67 | 0 | 82 | 18 |
| Surgery | 0 | 17 | 31 | 52 | 36 | 50 | 14 |
| Other | 7 | 17 | 11 | 65 | 21 | 72 | 7 |
| <i>Type of Practice</i> | | | | | | | |
| Solo | 3 | 15 | 24 | 58 | 21 | 69 | 10 |
| Group | 2 | 14 | 27 | 57 | 28 | 63 | 9 |
| <i>Place of Practice</i> | | | | | | | |
| Met. S. D. | 3 | 16 | 27 | 55 | 23 | 67 | 10 |
| Other (rural) | 2 | 9 | 19 | 70 | 25 | 67 | 8 |
| All Physicians | 2 | 15 | 26 | 57 | 23 | 67 | 10 |

TABLE 9.—Suggested Methods of Improving Continuing Education

| Suggestions | Physicians Supporting | |
|---------------------------------------|-----------------------|----|
| | No. | % |
| None | 94 | 38 |
| More Courses Sponsored By: | | |
| Medical Schools | 70 | 27 |
| Hospitals | 7 | 3 |
| Professional Societies | 5 | 2 |
| Fewer Courses and Better Coordination | 5 | 2 |
| Improved Quality of Existing Courses | 23 | 9 |
| Require Physician Participation | 9 | 4 |
| Make More Time Available | 12 | 5 |
| More Review Articles and | | |
| Bibliographic Services | 9 | 4 |
| Other Suggestions | 15 | 6 |

percent) thought that there were already too many courses and that there was need for better coordination of those already offered. An additional 13 (5 percent) thought the quality of the existing courses could be improved and that more time should be available to allow physicians to take advantage of existing opportunities. Of those physicians who believed that more courses should be given, the majority (40) believed these courses should be conducted by medical schools; only seven thought that courses were more appropriately sponsored either by community hospitals or by professional societies or both.

From Observation Study. In order to gain information regarding the competing demands on physicians' time particularly as they affect continuing education, a time study of 20 internists and general practitioners in group and solo practice was undertaken. As will be reported else-

where¹⁰ the average physician spent only 14 minutes during working hours on all forms of continuing education. On the average an additional 30 minutes each day during evening hours and on weekends was spent reading medical journals and participating in medical meetings. Internists were more likely than general practitioners to participate in continuing education, and those in group practice also participated more regularly than did those in solo practice.

Discussion

The interview data clearly indicate that most physicians regularly participate in all forms of continuing education but that this participation is not uniform. For instance, general practitioners attend more formal postgraduate courses but participate less regularly in hospital-based conferences and professional society meetings. On the other hand, internists and pediatricians more regularly participate in hospital-based conferences and professional society meetings, but attend fewer formal courses. Audio-Digest tapes, television broadcasts and video tapes do not seem to rank high as continuing education modalities, since interviewed physicians did not use them frequently.

It is of interest to compare the findings of the present study with those obtained by the California Medical Association's Bureau of Research and Planning on behalf of the Committee on Continuing Education of the CMA under the auspices of the California Medical Education and Research Foundation. That survey analyzed

2,649 responses to a questionnaire mailed to all practicing physicians in California. Although the two surveys addressed themselves to different sets of questions there was general agreement for those data common to both (for example, higher participation in formal courses by rural physicians than those in metropolitan practice). Whatever other minor disparities there may be between the two studies are most likely due to differences in experimental design regarding both sampling and interview as compared with the mail-response techniques.

Each interviewed physician was also asked how important he believed personal communications with other colleagues to be in keeping abreast of advances in heart disease, cancer and stroke. About half (55 percent) of physicians interviewed believed that personal communications were very important, and an additional 30 percent thought them to be moderately helpful. Consequently, it seems to us that this means, although difficult to quantitate, should be exploited further through extending the consultation process and by other such means.

Physicians in group practice were more likely to attend hospital-based teaching conferences, tumor conferences, and professional society meetings and to subscribe to Audio-Digest tapes than were their colleagues in solo practice. This suggests that physicians in group practice and partnership are better able to participate in continuing education than are their associates in solo practice. On the other hand, our data indicates that physicians living in metropolitan San Diego do not take any more advantage of the richer opportunities for continuing education that are close at hand than those living in rural areas

of the County or in the Imperial Valley, who may make a special effort to participate due to their relative isolation.

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